DR. JEROME KIDDER'S

HIGHEST PREMIUM

VITALIZING,

GENUINE SIX AND NINE CURRENT

ELECTRO-MEDICAL APPARATUSES,

North-East Corner of 17th Street and 4th Avenue, New York.

"Your method of varying the *Primary* as well as the induced currents, surpasses all other devices I have studied, as tested by scientific instruments and by physiological effects."

R. OGDEN DOREMUS, M.D., Prof. Chemistry and Physics in the N. Y. City College, and Prof. Chemistry and Toxicology Bellevue Hospital Medical College.

SILVER MEDAL

Awarded Dr. Jerome Kidder by the American Institute, New York, Nov. 15th, 1873, for the best Electro-Medical Apparatus yet invented. For illustrated catalogue, address

Dr. JEROME KIDDER,
50 Union Place, New York.

SUMMARY OF THE PRECEDING TREATISE,

AS EXEMPLIFIED BY DR. JEROME KIDDER'S IMPROVED ELECTRO-MEDICAL APPARATUSES.

Currents of different qualities have not only different characters of sensation, and different effects on muscular irritability, as recognized by all who have carefully scrutinized in regard to these varied electrical phenomena, but also **one quality** even when so weak in **power** as not to produce any pain, but rather a pleasant sensation, will show flashes of light when properly applied, as with large surface of wet sponge over the closed eye.

Secondary currents produce light to the eye, that is, they exercise the function of the optic nerve *without producing pain*, only when the tension of the current is increased to a certain degree in ratio with the diminished quantity. This effect is shown *best* by using the negative sponge at the eye, and having not very slow, but moderately slow interruptions by the vibrating armature, as produced by Dr. Kidder's apparatus, yet the proper quality as regards tension or pitch is requisite.

Another quality of current, even when the current is made strong enough to produce pain, will show no light to the eye—will not exercise the vital function of the optic nerve.

The preceding facts show conclusively that electricity can be varied in quality so as to produce different effects on different vital functions.

It must not seem strange to find electricity produced in many different qualities to have varied effects. There are, indeed, other facts recognized as true, and which might seem stranger still—for it is well known to all chemists, that the same proportion and kind of atoms may form substances so different in their nature as to be recognized as entirely different substances. For example, spirits of turpentine and oil of bergamot are identical in composition, being composed of ten atoms carbon, and eight of hydrogen, and the difference is recognized as merely that of the allotropic conditions and arrangement of the atoms. Also, **light** is recognized as the effect of vibrations or wave motions in the ether, which is everywhere; and the different colors result from the different length of these waves. (See Prof. Draper's *Chemistry*, and other scientific text-books.) And yet, even the difference in the character of the vibrations or wave lengths of the ether gives a difference in their chemical effects; for, indeed, it is known to be chiefly the yellow ray which causes the absorption of the carbon from the carbonic acid gas in the atmosphere into the solid form of a tree, by the influence of the sunlight falling upon its leaves. And it is the indigo ray which is chiefly concerned in causing hydrogen and chlorine to unite by passing light through a glass vessel containing a mixture of the two gases.

Also, sound results from **vibrations** in the atmosphere or other media. Yet sounds may have differences in pitch, and also differences in qualities of tones, having the same pitch. Its effects are what the spirit of man receives as jarring discords or sweet harmonies, and successions and qualities of tones, that inspire the emotions of courage and hope, or produce solemn and mournful feelings

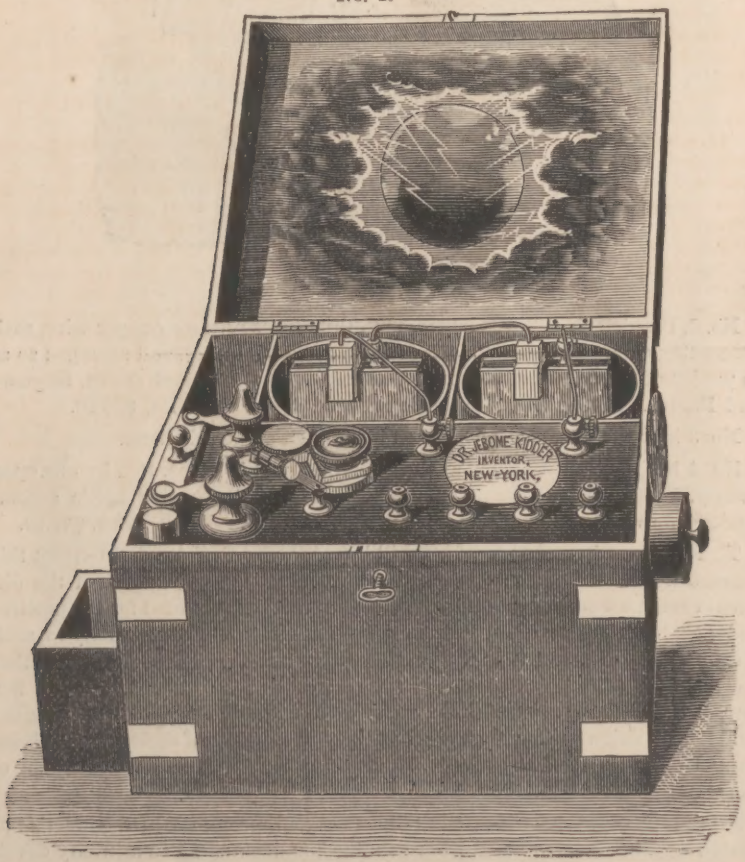
Considering the fact that mere variations or modifications in vibratory or wave motions produce differences in effects, we should not think it strange, but should rather **expect,** that the magnetic influence which excites the electricity in metallic helices would produce currents modified in qualities, by varying the physical condition of those helices; for, by varying the helices, we vary the medium of vibratory or wave motions resulting from polarizations, whose phenomenon is electricity.

It is because the terms *quantity* and *tenson*, as applied to electricity, do not express the real distinction in its qualities, that the terms are so generally misunderstood when thus used. The term *intensity* is often misused for power, but the difference is as plain as the difference between *loudness* and *pitch* in regard to sounds. A musical string *conditioned* for a given pitch *does not change that pitch* by a greater or less force of the blow causing it to vibrate; it simply changes its *loudness*. And in regard to electricity, the magnetic force upon the helix determines the power or strength of the induced current; but the intensity or tension, that is *quality*, is determined, not by the amount of magnetic force upon the helix, but by the *physical construction of the helix itself*. (See other pages of this manual.)

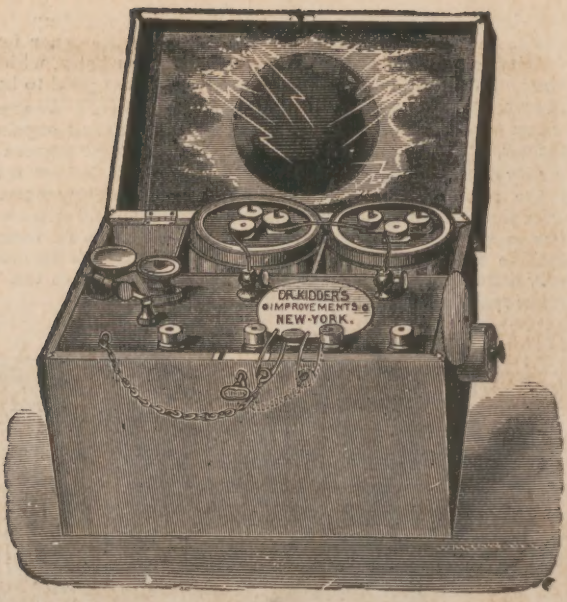
The common electrical machines are made on the principle of simply producing power. Those have only two helices and two currents, the inner helix being always a necessity for producing the current on the outer helix, which has too often been considered valuable in proportion only as it was good to hurt.

How would such a rule apply in buying a musical instrument? What would you think of a person who would select a piano solely from the amount of pain its noise could give the ear, or of the finish of the case? Do not all persons carefully regard the quality of music it is capable of offering to the human ear? Also, what would the most costly piano be worth if its strings were not tuned in accordance with the philosophy of the octaves, diapason, and diapente, within the degrees recognized by the human ear? How important it is, then, that an electrical machine for remedial uses should have the *pitch* of its currents not only sufficiently definite and varied, but also harmonized to meet the wants of the vital nervous system when used for the treatment of disease?

No. 1.



Large Double Battery Physician's Office Electro-Medical Apparatus, having ten currents, by varying the combinations of four differently conditioned coils, with current-changer to reverse the direction of all the currents. This machine has five posts, and arrangement to throw the second coil also into the primary circuit, but these are not shown in this engraving. Polished mahogany case, with brass-bound corners, and drawer underneath the helix. Size of case, 10½ inches long, 9 wide, and 7½ deep. The brass works are nickel plated. Price, including Handles and Sponge-holder, $50.



No. 2.

No. 2, Physician's Office Machine, with three coils of pure copper wire, each succeeding coil from the first being of longer and finer wire, and arranged so as to produce six qualities of electricity. Patented in the United States, England and France. Price, with two small rubber stopper batteries, $25.00.

No. 3 is superseded by No. 4, which is in much greater demand.

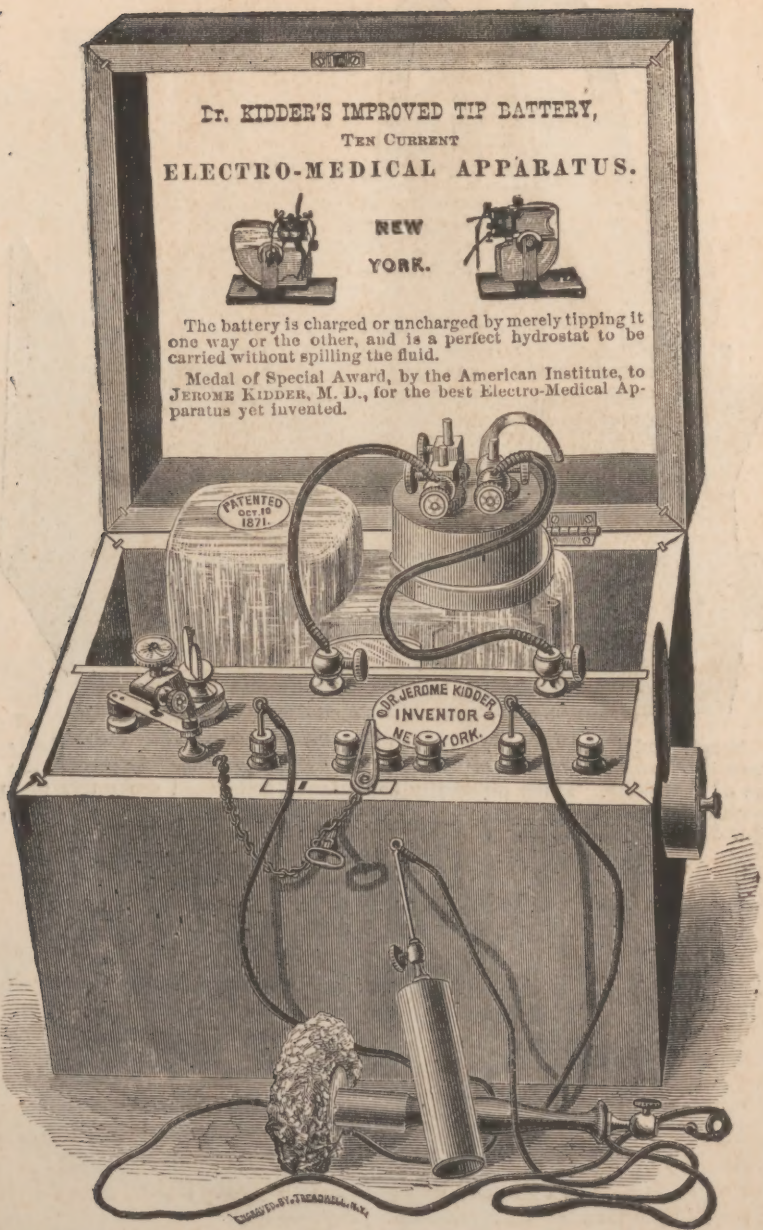
No. 4 has the coils the same as those in No. 2, but it is operated by one open battery, instead of two small rubber stopper batteries; and a bottle accompanies, into which the fluid can be poured whenever desired. Price, $20.00.

There is sometimes demand for a still larger range of effect; and to meet this demand a four-coil helix is furnished, developing ten currents from the different combinations produced by varying the two posts selected for the positive and negative. The added coil is conditioned to produce electricity in such a ratio of quantity and intensity, when used in combination with all the other coils, as will go *beyond* the range of the greatest effect on the muscles, and farther, *into* the range of soothing electricity, and, with mild power, to exercise the function of vision without producing pain. The power of these currents is increased or diminished at pleasure. This is apparatus No. 5,—see diagram of Tip Battery Apparatus.

All the advanced scientific practitioners use and recommend Dr. Kidder's improved apparatuses, because of the genuine modifications of electricity developed on the differently conditioned coils, and the means which command their perfect operation.

The only authorized testimonial from Prof. Doremus, shows the decided superiority of these apparatuses.

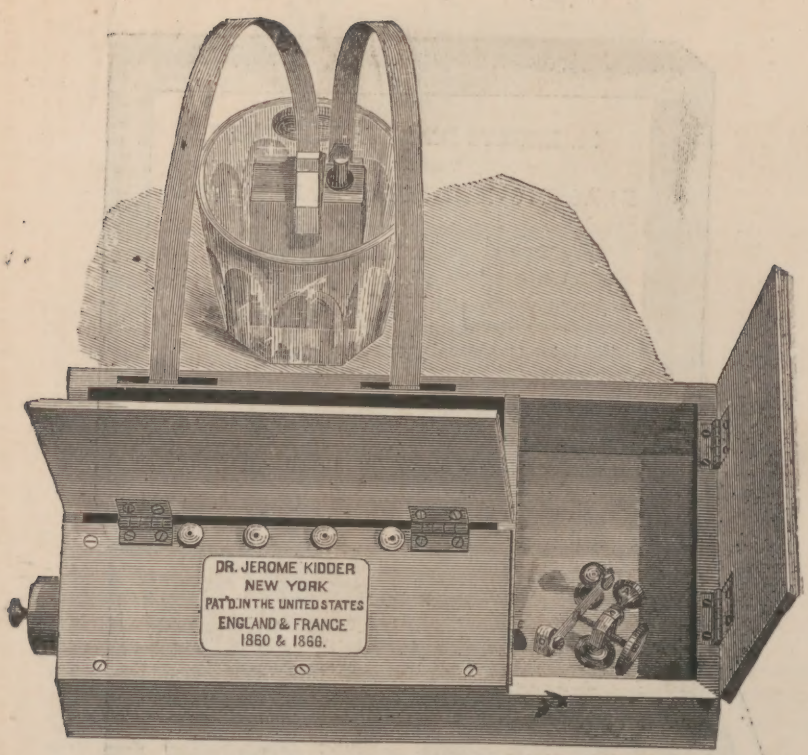
☞ Be careful to examine the date and to whom addressed of all pretended testimonials from Prof. Doremus.



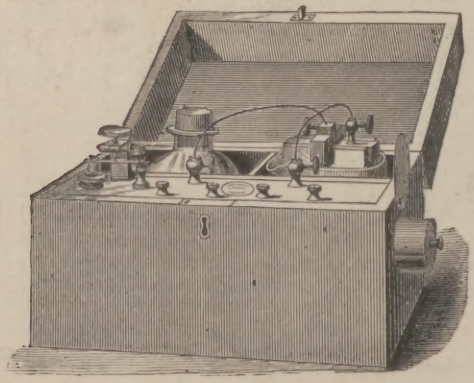
Dr. Jerome Kidder's Electro-Medical Apparatus (*No. 5*) has four differently conditioned coils, each arranged to use them in various combinations, producing ten different qualities of electricity.

Patented in the United States, England and France.

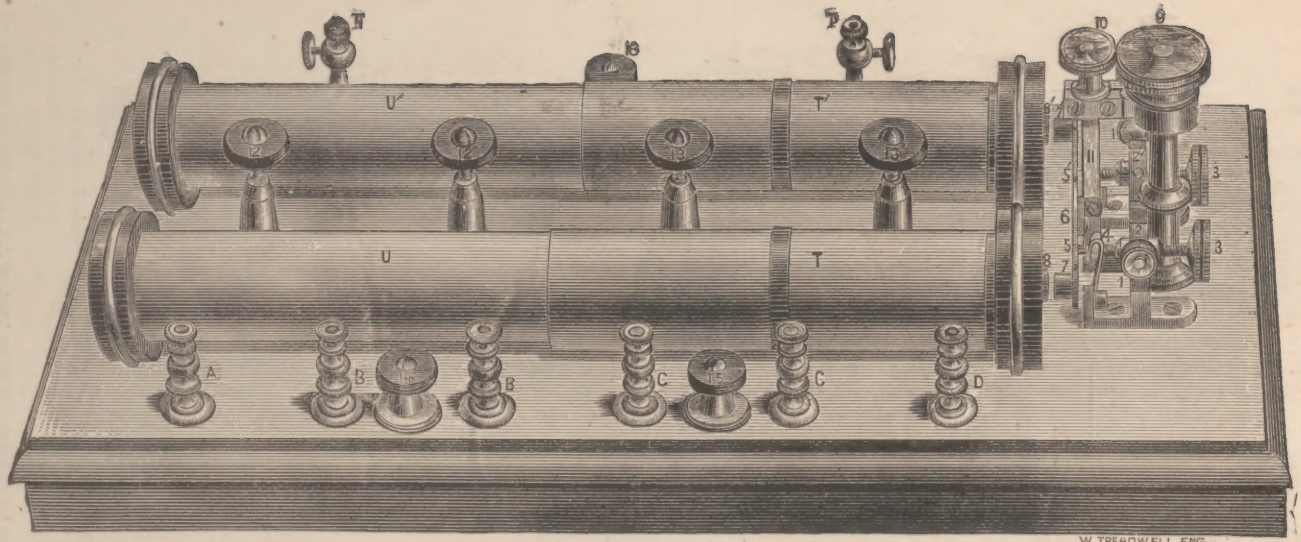
Price, with Hydrostat Tip Battery, $27.00. Price, with open battery, $24.00.



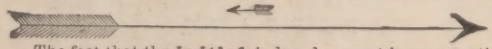
Family and Traveller's Six-Current Electro-Medical Apparatus, a very finely operating machine, of compact form, for the use of travellers who require the use of electricity. Three differently conditioned coils, used separately or in combinations, (single primary coil). Polished mahogany case, 9¾ inches long, 4½ wide, and 2½ deep. Price, including Handles and Sponge-holder, $18.



Six-Current Electro-Medical Apparatus in more compact form, for Family use. Single primary coil. Three differently conditioned coils, used either separately or in combinations. Polished walnut case, 7½ inches long, 6 wide, and 6¼ deep. Price, with Handles and Sponge-holder, $18.

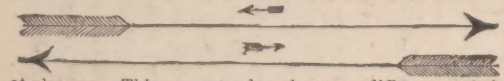


EQUAL ALTERNATING CURRENT APPARATUS.—It is well known, or should be, that the **initial current** of the so-called alternating induced current, which has in some instances been called "to and fro," is very weak—not perceptible to the sensation under ordinary circumstances—while the **terminal current** produces muscular contractions, etc. These two may be represented by the large and small arrows, pointing in different directions, thus:



The fact that the **initial** induced current is comparatively so weak, has been noticed by various writers; **and it can be proved** by controlling the vibrating armature with the thumb and finger, so that we may know when the circuit is closed and when it is broken, the electrodes being in the hands.

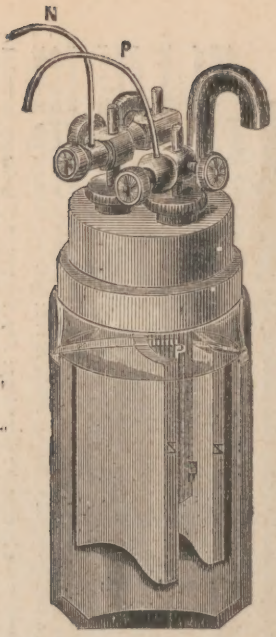
The cause of this is that the initial current is produced when the vibrating spring touches the point, and that the primary coil thus metallically closed receives the induced influence within itself instead of the human body receiving it, which is, compared to the metals, a very poor conductor. But when the primary coil is opened by the vibrating spring, there is then no metallically-closed coil to receive the terminal induced current, which is in the other direction, and the human body receives it; and it is varied in quality (as noticed in other pages of this work) according to the physical condition of the helix in which it is received.



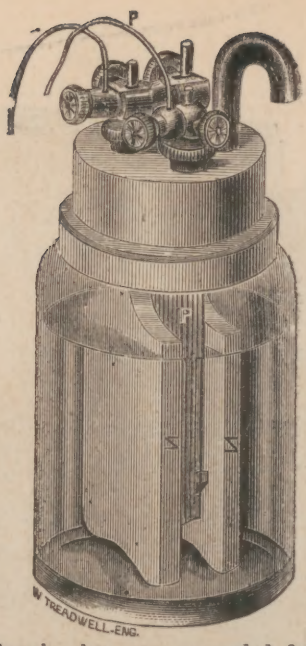
Dr. KIDDER patented in 1866 an extra apparatus, entirely unique, by which **equal** alternating currents are produced. It is accomplished by means of **two systems** of helices, their circuits **alternately** being closed and opened by means of a double-armed vibrating arrangement; and the currents are properly represented thus:

Currents of equal power succeed each other in opposite directions; also, the power of each may be varied at pleasure. This apparatus has also many different qualities of currents. The same quality of current showing light to the eye, shows more light when equal alternating than even the negative does when the terminal currents are all turned in one direction, which may be done simply by moving a small knob.

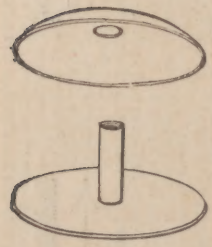
SECURED BY PATENT IN 1866. **Price of Helices, with Nickle Plated Metallic Works, from $55.00 to $100.00.**



Smee's elements suspended from rubber stopper in square jar, 2½ inches in diameter, $4.00.

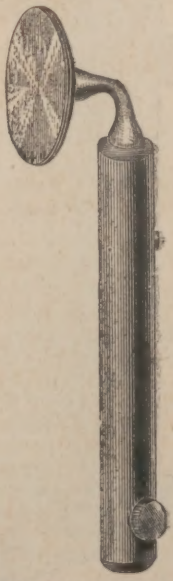


Smee's elements suspended from rubber stopper in round jar, 3½ inches in diameter, $5.00.



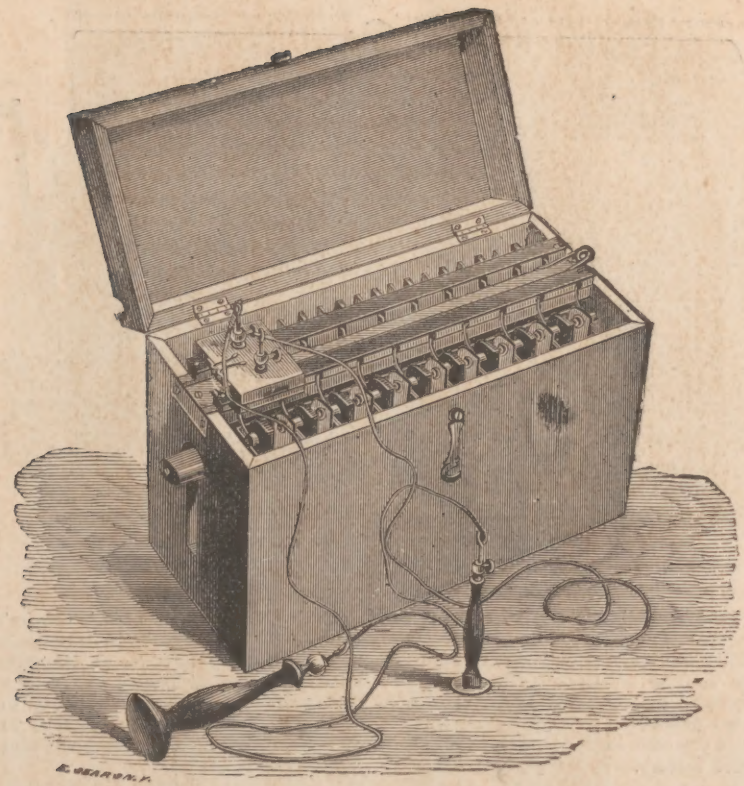
Improved Sponge Holder.

To fix the sponge on this holder, unscrew the handle B by turning the *handle itself*. Place the sponge on the under surface of the lower plate D, and bring the edges of the sponge over the edges of the plate; clasp it with the plate C, and hold all together by screwing on the handle B. Price, $1.50.



Side Sponge Holder with Interrupter. Price, $3.00.

A LARGE VARIETY OF OTHER EXTRA APPLIANCES FOR SPECIAL CASES ALWAYS ON HAND.



Primary Cell Battery, 12 cells, each cell 2⅛ inches long, horizontal measure, 1⅞ wide, 4½ deep. Polished walnut case, 10½ inches long, 7 wide, and 11½ deep. Price, $20.

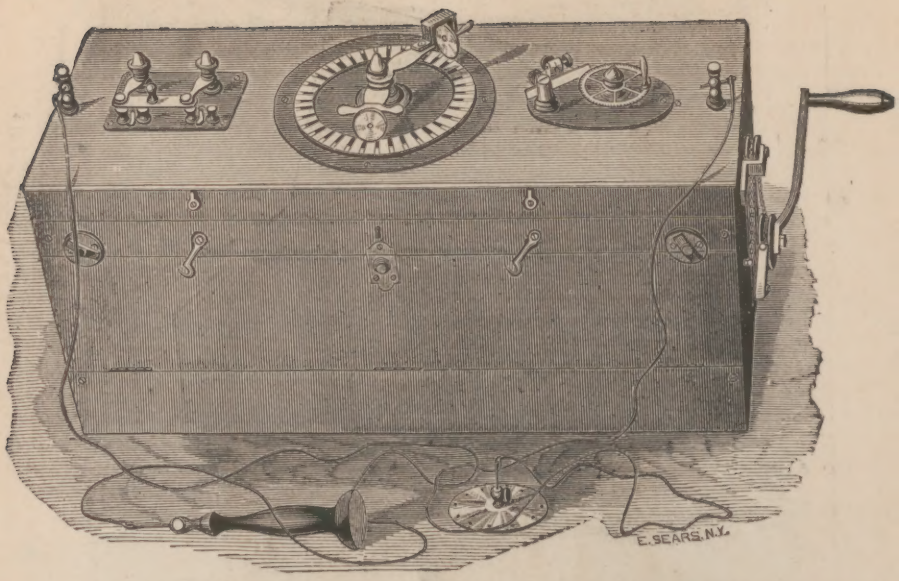
Primary Cell Battery, 18 cells, carbon and zinc elements, size of cells, 2¼ inches long, horizontal measure, 1⅞ wide, 4½ deep. Polished walnut case, 15 inches long, 7 wide, 11½ deep. Price, $30.

Primary Cell Battery, 18 cells, carbon and zinc elements, size of cells, 2½ inches long, horizontal length, 1½ wide, 4¾ deep. Polished mahogany case, 17 inches long, 7 wide, 12¾ deep. Price, $40. Twenty-four cells, $48.

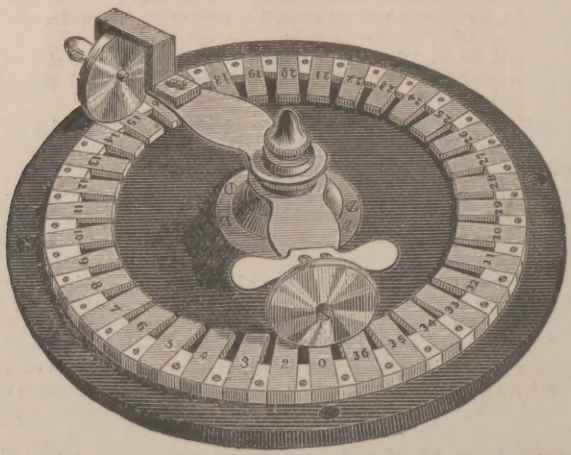
The above prices include, with the battery, two conducting cords, one ordinary sponge-holder, and one sponge-holder with two discs accompanying to hold the sponge, one disc smaller than the other, either of which can be used. These sponge-holders are patented.

A patented improvement is added to the above batteries, which increases the number of elements, without interrupting the circuit when the slide is moved; a very essential arrangement for many cases; and by pressing on the levers the current is interrupted when the slide is moved; also, when properly located, the current is alternately closed and interrupted by moving one of the levers. Also the current can be thrown rapidly and alternately in opposite directions. This arrangement adds a value to these batteries not possessed by any other manufacture. Price, with all these improvements, is $6 extra.

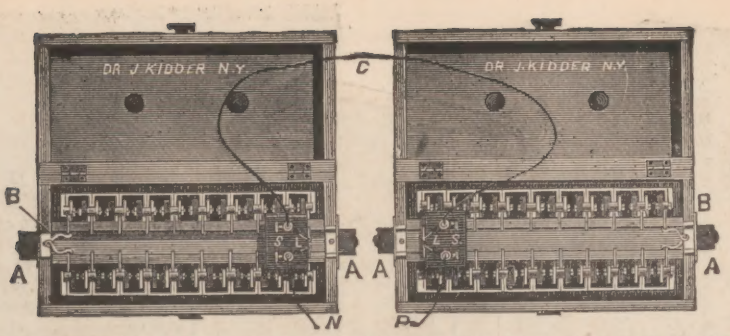
Batteries consisting of 24 and 32 or more coils of the larger size, more especially for hospital uses, varying in their prices according to finish, kept on hand and also made to order.



Primary Cell Battery, 36 cells, of the larger size, with double switch current reverser, wheel interrupter, and the great circle with wheel-armed compound switch to elect any consecutive number of cells, and also to increase or diminish the number either with or without breaking the circuit, having also a new patented arrangement added to change the condition from great intensity to great quantity for galvano-cautery. This battery has crank and pulleys to raise the cells to the elements, is in a polished mahogany case. This a splendid office battery. Price, $175.



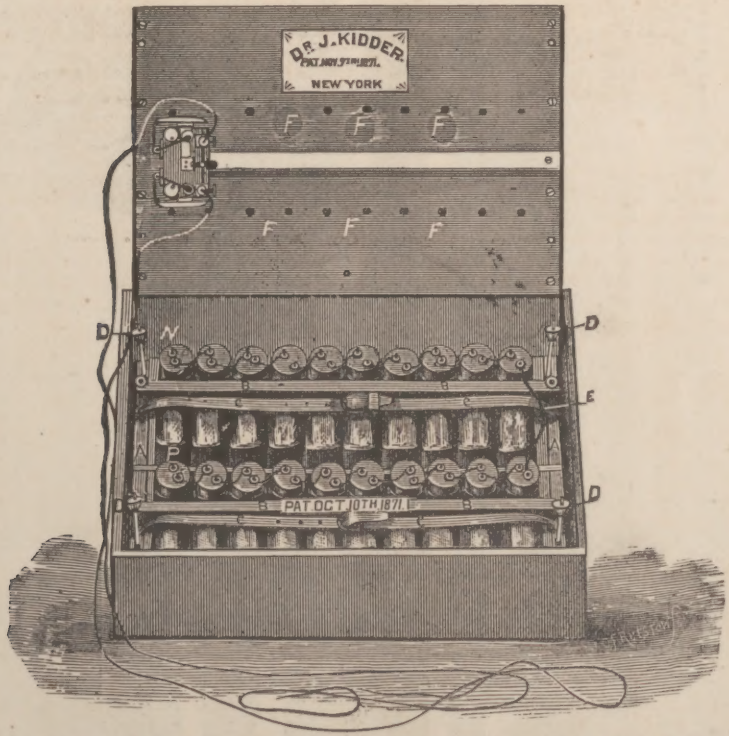
Enlarged view of the great circle, wheel-armed compound switch, elector of consecutive numbers of batteries, and to increase or diminish the number of cells included either with or without interrupting the circuit. Patented.



DR. KIDDER'S CELL BATTERIES, ARRANGED TO BE USED EITHER SEPARATELY OR TOGETHER.

Patented Nov. 7, 1871.

These are made with twelve cells, and also eighteen cells in each battery; and so arranged that they can be conveniently used separately or together, for greater convenience of portability. Prices of these batteries are found on page 10.

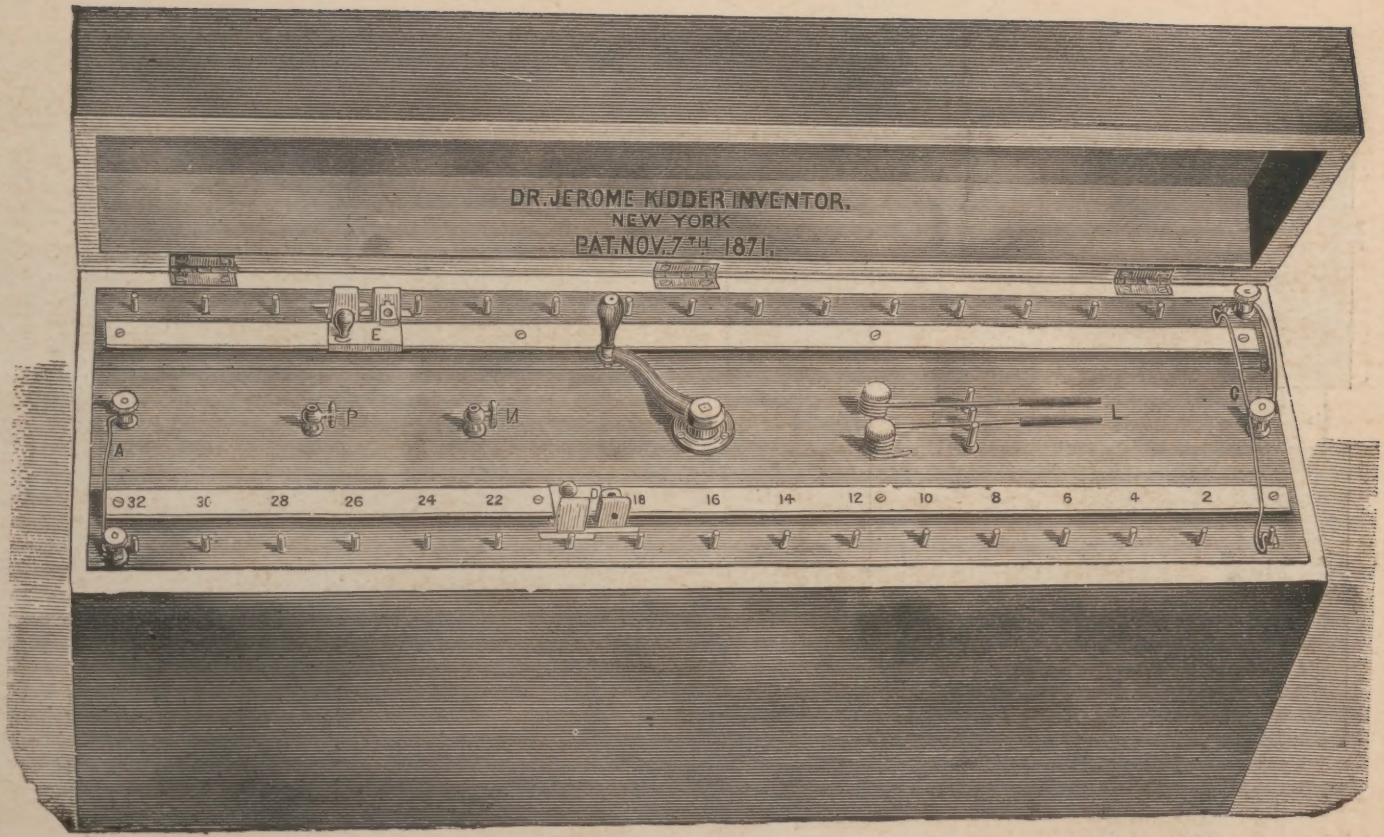


DR. KIDDER'S TWENTY-CELL TIP BATTERY, CHARGED WHEN LYING DOWN, AND UNCHARGED WHEN STANDING.

Patented Oct. 10, and Nov. 7, 1871.

The cut shows the inside lid removed to bring to view the cells with their elements. The metallic pins F F F, communicate with metallic springs underneath, which close on the poles of the cells when the inside lid is replaced. The two rows of cells are in separate trays, which can be lifted out of the case by the straps C C. Price, $40.

In a few weeks will be ready a battery of 18 elements on this principle, with rubber cells. It will be most simple in construction and convenient in management.


DR. JEROME KIDDER INVENTOR.
NEW YORK
PAT. NOV. 7TH 1871.
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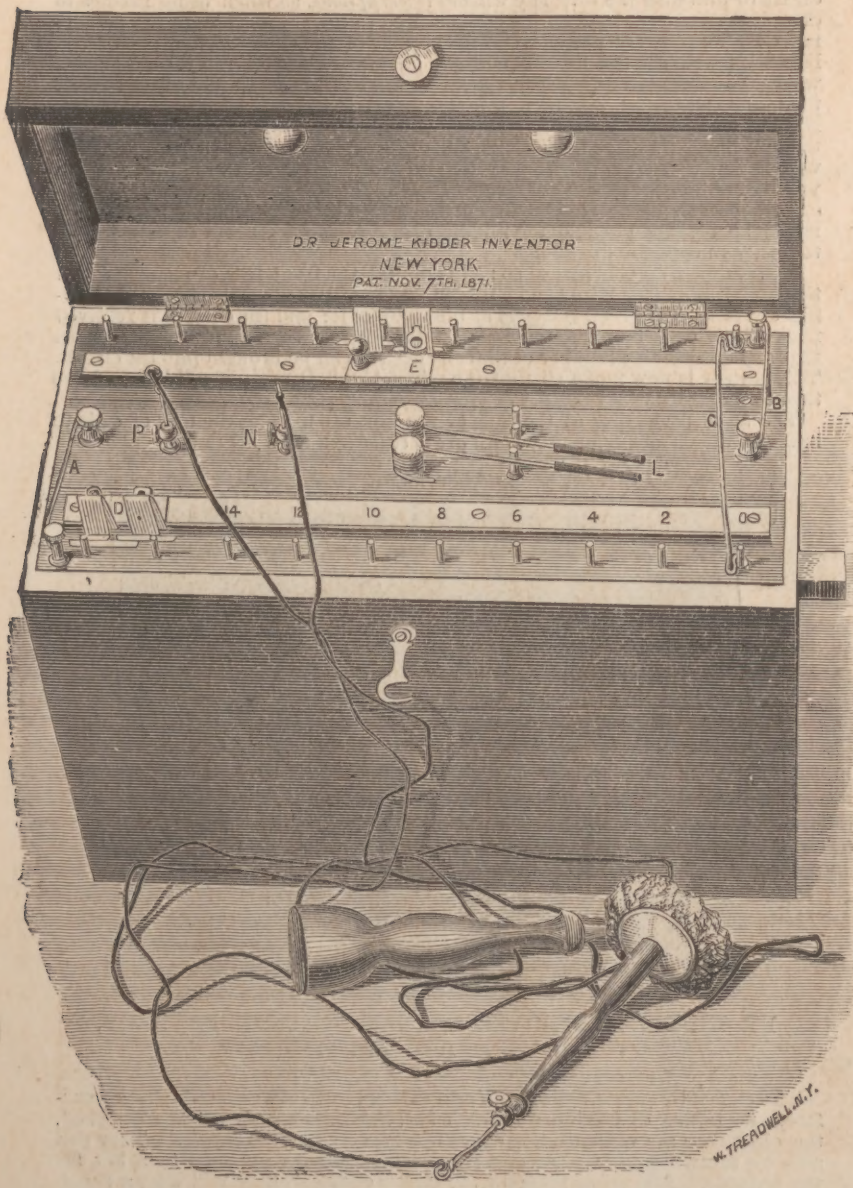
DR. KIDDER'S PRACTICAL HOSPITAL PRIMARY CELL BATTERY (see preceding page) consists of 32 cells of the larger form ($2\frac{1}{2} \times 1\frac{1}{2} \times 4\frac{1}{4}$), contained in a fine rosewood veneered and polished case, 27 inches long, $8\frac{1}{4}$ inches wide, and $12\frac{1}{2}$ inches deep. The metallic parts are finely nickel plated. It contains the superior arrangements for manipulating the currents, and the CELLS ARE RAISED BY MEANS OF A CRANK to immerse the elements. Conducting cords and two sponge-holders accompany the battery. Price, $80.00.

With patent arrangement to throw into *quantity* for Cautery, $120,00.



DR. KIDDER'S IMPROVEMENTS IN CELL BATTERIES.

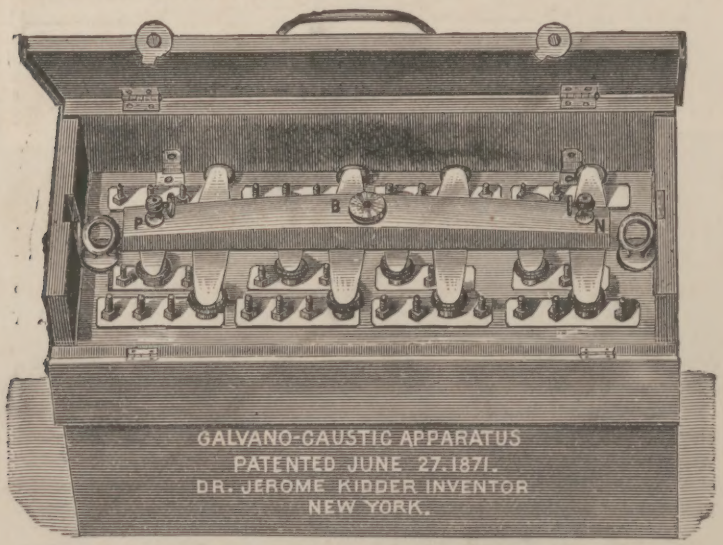
SIMPLE, CONVENIENT AND PRACTICAL. PAT. NOV. 7th, 1871. PRICE, $46.00.

See description next page.

The illustration on the previous page shows the 18 cell battery with the convenient manipulators of the current. D and E are metallic slides, each having two springs to connect with the poles of the cells. There is a key to lock one of the springs, so as to hold it away from contact with the poles; and when so withdrawn, the current is interrupted as the slide is moved to add or diminish the number of cells in the circuit. But when it is desired to increase or diminish the intensity *without interruptions*, as when using needles to discuss tumors, etc., both springs are allowed to touch the poles as the slide is moved. The current passes when the springs of the slide touch a pole. The levers L touch, *one* the middle and *one* an outside pin of the three in a row where the levers swing. When the levers are brought forward to bear against the middle and front pin, then the screw-cup P is positive and N negative. But if the levers are placed to rest—the front lever against the middle pin and the back lever against the back pin, then the direction of the current is the reverse. In either case, touching either one of the levers so as to break contact with the pin, interrupts the current. Placing the levers between the pins and swinging them backward and forward so that they synchronously touch alternately an outside pin and the middle one, throws the current rapidly and alternately in opposite directions.

The spring wire C is placed so as to connect the front row of elements with the back row This wire can be placed across at any opposite poles, thus leaving out of the circui' all the cells at the right of it: and the current is received from all the cells between them and this crossing wire; thus it will be seen that any consecutive number of the cells desired can be brought into the circuit. This battery is now made so that the wires A and B are not needed, and are therefore omitted..

The arms projecting at the ends of the box are to raise the tray of cells to immerse the elements for use, *which are to be lowered when not in use.*



DR KIDDER'S IMPROVED GALVANO-CAUSTIC BATTERY,

PATENTED JUNE 27, 1871.

The most perfect, convenient and practical Caustic Battery.

The elements, consisting of zinc and carbon, have 672 square inches of surface. By means of placing a wooden bar, having metallic springs attached, the eight cells are virtually thrown into four, using all the surface. They can also be thrown into two, or one, by springs suitably attached to a bar for the purpose. Arranging them for the higher quantity, they will heat a shorter and thicker wire, and for the higher intensity will heat a longer and finer wire. The box is 14½ inches long, 6 inches wide, and 11¾ inches deep. Price, $65.00.

Large size for office, having upwards of 4000 square inches surface. Price, $125.00.